

BIDDER _____

BID SECURITY _____

CITY OF NEWARK
Delaware

CONTRACT NO. 17-13

PURCHASE OF MATERIAL FOR THE CHEMOURS PROJECT

NOTICE

Do not disassemble. Return intact with
properly completed forms or bid may be rejected.

CITY OF NEWARK
Delaware

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PURCHASE OF MATERIAL FOR THE CHEMOURS PROJECT

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CITY OF NEWARK
Delaware

CONTRACT NO. 17-13

PURCHASE OF MATERIAL FOR THE CHEMOURS PROJECT

NOTICE OF LETTING

Sealed bids for Contract No. 17-13, Purchase of Material for the Chemours Project will be received in the Purchasing Office, Newark Municipal Building, 220 South Main Street, Newark, Delaware, 19711, Newark, Delaware until 2 p.m., prevailing time, Tuesday, January 9, 2018 and will be publicly opened and read aloud in the Council Chamber shortly thereafter.

Copies of the contract documents may be obtained in the Purchasing Office on the second floor of the Newark Municipal Building or on the City's website at www.newarkde.gov/bids.aspx.

CITY OF NEWARK
Delaware

CONTRACT NO. 17-13

PURCHASE OF MATERIAL FOR THE CHEMOURS PROJECT

GENERAL PROVISIONS

1. BIDS

Each bid shall be submitted on the proposal form included herein. The proposal and all other required documents must be submitted in a sealed envelope clearly identified with the bidder's name and marked, "City of Newark - Contract No. 17-13, Purchase of Material for the Chemours Project," and will be received in the Purchasing Office, 220 South Main Street, Newark, Delaware, 19711 until 2 p.m., prevailing time, Tuesday, January 9, 2018. Each bid so submitted shall constitute an irrevocable offer for a period of sixty (60) days following the bid opening date.

2. TAXES

The bid price shall not include federal or state taxes. If applicable, the bidder shall furnish the City with the necessary tax exemption forms in triplicate upon submission of his invoice.

3. BID SECURITY

No bid will be considered unless accompanied by a certified check, cashier's check or bid bond in the amount of one thousand dollars (\$1,000). If a bid bond is submitted, it must be made out on the attached "Bond to Accompany Proposal" form. The successful bidder, upon his failure or refusal to execute and deliver the contract within ten (10) days after he has received notice of acceptance of his bid, shall forfeit to the City for such failure or refusal, the security deposit with his bid.

4. AWARDS

Following review of all bids by the City Manager and her recommendation to the Mayor and Council, awards, if any, will be made to the lowest responsible bidder. The Mayor and Council reserve the right to reject any or all bids and to waive minor irregularities and defects in form where the best interests of the City would be served. The City reserves the right to divide the award of the contract into each of the parts designated in the specifications and proposal.

5. CONTRACT SURETY BOND

A contract surety bond satisfactory to the City of Newark and in the full amount of the contract may be required by the successful bidder within ten (10) days of the contract award date. Upon receipt of this surety bond, the City will return any certified or cashier's check submitted as bid security.

6. DELIVERY

Delivery shall be F.O.B. City of Newark Warehouse, Phillips Avenue, Newark, Delaware. The successful bidder shall include the type and serial number of all equipment on invoices and packing slips.

7. INSPECTIONS

All equipment shall be subject to final inspection. If, in any way, an item fails to meet the terms of the contract, it may be rejected or liquidated damages charges made. The decision of the City will be final and any rejected items or material will have to be replaced at the expense of the bidder.

8. INTENT OF SPECIFICATIONS

It shall be the bidder's responsibility to furnish the equipment specifically indicated in these specifications and such other as may be required.

9. REGULATIONS AND EXCEPTIONS

Any and all exceptions which are taken to the specifications shall be noted on the Proposal form. The listing of an exception may be grounds for rejection. All equipment must meet all applicable federal or state regulations.

10. STANDARDS AND MANUFACTURER'S WARRANTY

All equipment will be unused in all component parts and will be the latest current production including all accessories. The specifications will be construed as the minimum required. When the manufacturer's standards exceed these, the standard units will be furnished. All material will be free of defects. Manufacturer's standard warranties shall apply.

11. WORKMANSHIP

Workmanship shall conform to the best current manufacturing practice followed for equipment of the type. Component parts and

units will be manufactured to definite standard dimensions, with proper fits and clearances.

12. ADVERTISEMENT

It is further agreed that any bidder submitting a bid will not use the name of the City in any advertisement without first obtaining the written consent of the City Manager.

13. EEO AND LICENSING

The bidder shall possess all business and other licenses required by the State of Delaware and also be a fair and equal opportunity employer.

14. NON-COLLUSION

The vendor shall not, either directly or indirectly, enter into any agreement, participate in any collusion, or otherwise take any action in restraint of free competitive bidding in connection with the contract.

15. INQUIRIES AND ADDENDA

Any inquiries regarding the bidding process shall be directed to Mr. Mark Brainard, Assistant to the Managers, at 302-366-7000. Any questions regarding the specifications shall be directed to Mr. Bhadresh Patel, Director of the Electric Department at 302-366-7000 x 2085. Any changes to the contract documents shall be made only by numbered addendum(a) issued not later than four (4) days prior to the date set for bid opening. Prospective bidders shall bear the entire responsibility for being sure they have received any and all such addenda.

16. DAMAGES FOR LATE DELIVERY

The dates for delivery of the equipment are important and may influence the award of the contract. Submitted delivery dates shall be calculated from the date of notification of award. Liquidated damages of \$25.00 per calendar day may be assessed by the City, at its discretion, for every day that delivery is extended beyond the submitted delivery date.

17. PAYMENT

Payment shall be made within thirty (30) days from receipt of the equipment, subject to final inspection and acceptance of the items by the City.

18. TERMINATION OF AGREEMENT

This agreement may be terminated by the City upon thirty (30) days written notice if the contractor fails to perform satisfactorily in accordance with the terms and conditions of the contract. In the event this agreement is terminated, the contractor shall be paid for services satisfactorily rendered up to the termination date.

CITY OF NEWARK
Delaware

CONTRACT NO. 17-13

PURCHASE OF MATERIALS FOR THE CHEMOURS PROJECT

TECHNICAL SPECIFICATIONS

ITEM #1 - Two (2) - 34.5KV VACUUM CIRCUIT RECLOSERS

1. General

Application Publications

- A. Unless modified by these specifications, all material furnished shall conform to the latest standards of the following: American National Standards Institute (ANSI); American Society for Testing and Materials (ASTM); Institute of Electrical and Electronic Engineers (IEEE); National Electrical Manufacturers Association (NEMA); National Fire Protection Association (AFPA); and Underwriters laboratory (UL).
- B. This specification covers the requirements for an electronically controlled, solid dielectric vacuum recloser for use on a 34.5kV system and rated at 38kV. The complete operating recloser consists of the high voltage switching mechanism unit working in conjunction with a control cable coupled electronic control unit.

2. Products

2.1 Recloser Manufacturers

- A. Subject to compliance with requirements, provide products by one of the following:
- Cooper Industries, Inc.
 - ABB
 - G & W Electric Company

2.2 Recloser Controller Manufacturers

- A. Subject to compliance with requirements, provide products by one of the following:

- Cooper
- Schweitzer Engineering Laboratories, Inc.
- G & W Electric Company
- ABB

2.3 Recloser Configuration

- A. Two (2) complete recloser assemblies shall be furnished under this specification consisting of the high voltage switching mechanism unit and the operating control unit connected via control cable including various accessories to function as a Fault Detection unit.
- B. Recloser configuration shall be horizontal, pole mount center.

2.4 Recloser Construction

A. Mechanism Enclosure

- The magnetic actuator and corresponding linkage assembly shall be housed within an air insulated enclosure with appropriate venting. A contact position indicator shall be provided visible from the ground when the recloser mechanism is mounted at operating height. Lifting provisions shall be provided.
- The recloser shall be electrically trip free. Any applied close signal shall not inhibit the recloser from tripping on the programmed time-current curve.
- The manual trip and lockout handle (ring) shall be made of stainless steel for maximum corrosion resistance. A mechanical block device shall further prohibit accidental closing when the manual trip handle is used.
- The recloser shall include Cooper lightning URT27110A1A1A1A arrestors to the recloser tank; three (3) on the source side and three (3) on the load side.

B. Operating Mechanism

- The operating mechanism shall utilize a magnetic actuator for opening and closing of the vacuum interrupters. The magnetic actuator shall be powered by capacitors located in the control enclosure. The design of the recloser shall permit 100 open and close operations after loss of primary control

voltage for dead line operation.

- The recloser shall contain no high voltage closing coils. The recloser shall be capable of operating fully from a separate 120 VAC source and include a GFI duplex receptacle.
- Vacuum interrupter contact position indication shall be accomplished using green (OPEN) and red (CLOSE) indicators located on the bottom of the mechanism enclosures and through LED's located in the control.

C. Vacuum Interrupters

Interruption of the fault or load current shall be accomplished through vacuum interrupters located inside the solid dielectric modules.

D. Solid Dielectric Modules

The solid dielectric modules shall utilize epoxy solid insulation to fully encapsulate each of the three vacuum interrupters. The solid dielectric modules shall be fully shielded and incorporate a high impact poly-carbonate, track resistant, UV stable covering. The modules shall be dead tank or dead front technology and shall conduct a fault to ground through their external surface in case of a flash over. The operating temperature shall be -60 degrees C to + 65 degrees C. One current transformer shall be integrally molded into each module rated at 1000/1 ratio. CT accuracy shall be +/- 1%. Capacitive style voltage sensors shall be molded with a minimum of one (1) on the source side and one (1) on the load side, IEEE 386 bushing interface. Voltage sensing accuracy shall be +/- 2% over the temperature range - 20 degrees C through + 40 degrees C. The accuracy shall be +/- 4% at 60 degrees C through +65 degrees C. The phase angle accuracy of the voltage sensors shall be +/-1%.

E. Current Transformer

One current transformer shall be integrally molded into each module rated at 1000/1 ratio. CT accuracy shall be +/- 1%. The current transformers shall be protected by a CT clamping circuit internal to the recloser to minimize the possibility of hazardous voltage entering the control compartment or exposure due to the control cable being disconnected.

F. Voltage Sensors

Capacitive style voltage sensors shall be molded with one (1)

on the source side and one (1) on the load side. IEEE 386 bushing interface. Voltage sensing accuracy shall be +/- 2% over the temperature range - 20 degrees C through + 40 degrees C. The accuracy shall be +/- 4% at - 60 degrees C through + 65 degrees C. The phase angle accuracy of the voltage sensors shall be +/- 1%.

G. Finish Requirements

The recloser tank shall be painted Munsel Notation 5BG7.0/0.4, ANSI 70 Gray. The coating system shall meet or exceed IEEE Standard C57.12.31 2010 standard coating system requirements for pole-mount equipment.

2.5 Design Ratings

A. Recloser

The recloser shall have the minimum design ratings:

Maximum Design Voltage	38kV
Nominal Operating Voltage	34.5kV
Impulse Level (BIL)	170kV
60 Hertz Withstand Voltage (Dry, one minute)	70kV
(Wet, ten seconds)	60kV
Continuous and load break Current	800A
Symmetric Interrupting Current	12,500 A

B. IEEE C37.60 Fault Interrupting Duty

<u>Approx. Interrupting Current Amps</u>	<u>No. of Fault Interruptions</u>
2000	44
6000	56
12000	<u>16</u>
TOTAL	116

2.6 Electronic Recloser Controller/Relay

The recloser control shall be automation ready for installation in an FDIR System. Communications will be wireless radio.

The recloser control shall include extensive system protection functionality, including ANSI phase, ground and negative sequence overcurrent protection, over/under frequency, over/under voltage, sensitive ground fault, directionality, and synchronism check.

Analysis tools shall include fault locating, event recording and oscillography functions.

Metering functions shall include demand and instantaneous current on a per phase basis, instantaneous voltage and power factor on a per phase basis and power (real, reactive, apparent) on a per-phase or total basis.

Harmonics shall be provided on a per phase basis.

Symmetrical components for both voltage and current shall be displayed along with kilowatt-hours for energy metering.

Controller shall communicate via DNP 3.0 protocol and be capable of upgrade to ICE 61850.

Communications shall be digital and arranged to be compatible with the provided ratio interface. Provided with serial and Ethernet communication ports.

Controller shall be furnished with all modules for future fiber optic Ethernet communications.

Control parameters shall have the ability to be programmed via a personal computer (PC) connected to the control through a front panel RS-232 port.

The recloser control shall have a door alarms switch and it should be wired to the control.

3.0 Shop Drawings, Correspondence, Shipment and Warranty

3.1 Shop Drawings and Manufacturer's Data

Submit electronic PDF copy of shop drawings and Manufacturer's data for each item within eight (8) weeks after receipt of the Notice to Proceed.
This information shall include the following:

- Recloser Type
- Rated Voltage KV
- Continuous Current Amperes
- Rated Short Circuit at Maximum Voltage, Amperes
- Rated Interrupting Time, Hertz
- Rated Reclosing Time, Hertz
- Rated Current, Amperes
- Total Shipping Weight

- Wiring or Connection Diagram
- Controller/Relay Details
- Instruction Manual

3.2 Engineer's Review

Engineer's review of drawings and manufacturer's data applies only to the general arrangement of equipment and shall not relieve the Seller of the responsibility for correctness of design, details and dimensions. The Engineer shall be allowed fifteen (15) days from the date of which the submittal documents arrive at the Engineer's office to review and return documents. This shall in no way modify the shipment dates as specified unless more than fifteen (15) days are required to review the drawings; in which case, additional time may be added to the date of delivery. Engineer shall return all comments electronically.

3.3. Final Review Drawings

Electronic PDF and AUTOCAD copy of final review drawings shall be furnished to the Engineer at least thirty (30) days prior to the arrival of any equipment. The Engineer shall be allowed ten (10) days from the date on which the submittal documents arrive at the Engineer's office to review and electronically return any comments. This shall in no way modify the shipment dates specified unless more than ten (10) days are required to review the drawings, in which case, additional time may be added to the date of delivery.

3.4 Installation of Instruction Books

Submit three (3) copies of installation instruction books, ten (10) days prior to the arrival of equipment, which describes in detail all the necessary steps the owner must follow to adequately install and align equipment.

3.5 Engineering Correspondence

All engineering submittals and correspondence shall be submitted to:

Bhadresh Patel, Director
City of Newark, Electric Department
City Municipal Building

220 South Main Street
Newark, DE 19711

All purchasing/invoices correspondence shall be submitted to:

Bhadresh Patel, Director
City of Newark, Electric Department
City Municipal Building
220 South Main Street
Newark, DE 19711

3.6 Electronic Documentation

Furnish electronic files on CD of all approved final review drawings and literature no later than thirty (30) days after shipment date. Also, submit a copy of all drawings on CAD using AutoCAD Release 2014 or later.

3.7 Delivery Location, Delivery Schedule and Shipment Notification

A. Delivery Location

All material shall be delivery to:

City of Newark, Central Stores Warehouse
406 Phillips Avenue
Newark, DE 19711

B. Delivery Schedule

Time is of the essence in the performance of this contract. The Seller, by submitting a proposal, agrees to furnish all material specified in this section in accordance with the date (s) specified in the proposal.

Delivery of the reclosers shall be considered a priority and shall be scheduled as early as possible in the contract.

C. Shipment Notification

The vendor shall notify the Engineer one (1) week in advance of the shipment of material. The vendor shall identify the items being shipped and

shall indicate the exact arrival date and approximate arrival time. Material will not be accepted after 2:00 p.m. Material will not be accepted on Saturdays and Sundays or Delaware State or Federal Holidays. Material arriving after 2:00 p.m. on Friday will be off-loaded on the following Monday. The vendor shall pay all demurrage charges for any and all material arriving after the acceptable time/date.

3.8 New Equipment

All material and equipment shall be new. Used, reconditioned or remanufactured material will not be allowed.

3.9 Warranty

A minimum of one (1) year warranty against defects in materials and workmanship shall be furnished. Any standard manufacturer warranties that exceed one (1) year shall be honored by the Seller. The warranty period shall begin on the date the material and equipment arrives at the City of Newark.

3.10 Work Performed Prior to Final Shop Drawing Review

All fabrication or assembly of equipment prior to receipt of reviewed shop drawings from the Engineer shall be the sole responsibility of the Vendor. Any changes resulting from Shop Drawing review to meet contract documents which requires modification to pre-assembled equipment shall be performed by the Vendor at no additional cost. Delays caused by incorrect pre-assembly will in no way relieve the Vendor from meeting the specified shipment dates.

3.11 Recloser Testing

Perform the following tests as a minimum:

- Functional test to assure unit is operating.
- Electrical TCC trip test. (Recloser and control)
- High-potential withstand test to determine dielectric strength of the unit.
- Continuity test to assure correct internal control connections.

ITEM #2 - Three (3) - 34.5kV Gang Switch

3 pole gang operated switch, vertical break, upright mounting, 200 KV BIL, 600A, 34.5kV mounting arrangement ED153R5

S & C 135734R2-E-A2D, ED153R5

ITEM #3 - Two (2) - 35kV Underground Distribution Switchgear

1.0 Scope

This specification applies to three-phase, 3 - way [2 - source, 1 - tap], 60 Hz, fully dead front, sectionalizing underground distribution switchgear; with maximum main bus rating of 600 amperes continuous current and maximum tap rating of 600 amperes. Source switching shall be accomplished with vacuum switches. Tap overcurrent protection shall be accomplished utilizing a resettable vacuum fault interrupter (VFI) which shall be provided with three-pole ganged operation. The unit shall be manually operated.

The unit is to be insulated with E200 less-flammable fluid for operation to minus 30 degrees C dielectric, contained in a sealed tank design, so operation is unimpaired by flood conditions or contaminated environments (except control). The unit shall utilize vacuum interrupters for all current switching and fault current interruption such that the dielectric media is not consumed or contaminated by normal operations of the interrupters. The unit shall be designed for installation on a concrete pad at ground level.

The switchgear shall use resettable interrupter controls and shall not rely on fuses for overcurrent protection.

2.0 Applicable Standards

IEEE Std C37.74™-2003 standard - IEEE Standard Requirements for Subsurface, Vault, and Pad-Mounted Load-Interrupter Switchgear and Fused Load-Interrupter Switchgear for Alternating Current Systems Up to 38 kV.

IEEE Std C37.60™-2003 standard - IEEE Standard Requirements for Overhead, Pad-Mounted, Dry Vault, and Submersible Automatic Circuit Reclosers and Fault Interrupters for Alternating Current Systems Up to 38 kV.

IEEE Std C57.12.28™-2005 standard - Standard for Pad-Mounted Equipment - Enclosure Integrity.

IEEE Std C57.12.29™-2005 standard - IEEE Standard for Pad-Mounted Equipment - Enclosure Integrity for Coastal Environments - applicable when stainless steel construction is specified.

IEEE Std 386™-2006 standard - Standard for Separable Insulated Connector Systems for Power Distribution Systems Above 600 V.

IEEE Std C37.90™-2005 standard - IEEE Standard for Relays and Relay Systems Associated with Electric Power Apparatus.

IEEE Std C37.90.2™-2004 standard - Standard for Withstand Capability of Relay Systems to Radiated Electromagnetic Interference from Transceivers.

3.0 Ratings

The switchgear shall be rated as follows:

Nominal Voltage	35 kV
Maximum Design Voltage	38 kV
BIL	150 kV
1-minute Withstand Voltage (60Hz)	70 kV
Momentary Current, 10 cycles (sym)	12.5 kA
1-second Withstand Current (sym.)	12.5 kA
Vacuum Fault Interrupter:	
Continuous Current, (max.)	600 A
Interrupting Current (sym./asym.)	12.5/20.0 kA
Making Current (sym.)	12.5 kA
Cable Charging Interrupting Current	40.0 A
Load-Break Switch:	
Continuous Current, (max)	600 A
Load Switching	600 A
3-shot make and latch (sym./asym.)	12.5/20.0 kA

Minimum Full Life Fault Interrupting Duty Cycle per IEEE Std C37.60™-2003 standard (2 duty cycles)		Number of Operations
Percent of Interrupting Current Rating:	15-20 %	88
	45-55 %	112
	90-100 %	32
Total		232

The switchgear shall have an ambient operating temperature range of -30°C to +40°C.

4.0 Construction

The underground distribution switchgear shall consist of a 2-sided, sealed insulation tank, and separate front and rear cable compartments. Overall height, width, and layout shall conform to the manufacturer's standard construction practice for the configuration, ratings, and voltage class specified. Standard construction shall be of mild steel with stainless steel hardware.

The liquid filled unit shall have a tamperproof bolted tank cover design. The sealed tank (with deadfront terminators installed) shall be capable of withstanding flood immersion while energized, and shall be impervious to contaminants and animals, so as not compromise the main insulation structure. The cable compartments shall be located at the front and back of the tank respectively. The main cable compartments may house a combination of source way(s) and load or tap way(s). All switch and VFI operating handles shall be located on the same front plate as the way that they operate, in order to reduce the likelihood of operating an incorrect switch. Recessed lifting provisions for suitable balanced lift shall be provided on the tank ends.

Cable compartments shall both have a minimum depth of 30 inches, to provide ease of cable installation and allow for the addition of termination accessories.

Side-hinged cabinet style doors shall be provided. The side-hinged doors shall provide three-point latching and shall not require a center support post. Side-hinged doors shall have a door stay to manually latch the door in the open position at approximately 120 degrees from the closed position. The right-hand door on each side shall be the first opening door and shall be secured with a recessed stainless steel pentahead bolt, with provisions for padlocking. The cabinets shall be equipped with a hinged cabinet top to facilitate entry to the cable compartments; it shall open approximately 60 degrees and have door stays to hold it in the open position. The cabinet top when in the closed position shall interlock with the cabinet doors without additional means required to secure it. Cabinet construction shall meet all NEMA and ANSI security requirements as defined in the latest revision of C57.12.28 standard and the construction requirements of the latest

revision of C37.74 standard.

Unit shall be shipped complete with E200 less-flammable fluid for operation to minus 30 degrees C.

The unit shall be equipped with a 1-inch oil-fill plug and a 1-inch drain plug with 3/8" sampler. A single automatic pressure relief valve shall be supplied that is hotstick-operable and located on the source-side front plate above the oil level indicator within the switchgear. The unit shall have sight gauges to monitor the dielectric level located on each unit side equipped with an operating handle.

A 1/2 -13 UNA stainless steel ground nut shall be provided that is welded to the switchgear tank and mounted beneath each bushing.

A non-corrosive operating diagram (one-line schematic of the unit) shall be affixed to the inside of the right hand, first operating door, on both sides of the unit, if two (2) sided. When visible break switches are specified, the one-line schematic will also show the electrical connection and mechanical interlock of these switches. A single nameplate shall be provided that is mounted on the source side tank front plate in the upper right-hand corner. The switching current and voltage ratings on this nameplate shall also apply to the visible break switch. The nameplate shall contain the following information:

- Catalog Number/Model Number
- Serial Number
- Nominal voltage class, kV
- Rated maximum voltage, kV
- BIL, kV
- Manufacturing Date: MM/YYYY
- Rated continuous current, A
- Rated load interrupting rating, A
- Momentary current rating, kA asym.
- Close & latch rating, kA asym.
- Total weight, lbs.
- Liquid dielectric volume (gallons)

5. Bushings

Bushing shall be deadfront type for use with separable connectors conforming to latest revision of IEEE Std. 386 standard and ANSI Standard C119.2. The source ways shall have a continuous current rating of 600 ampere with bushings. Tap ways shall have a continuous current rating of 600 ampere with bushings.

Where specified, 600 A Bushing shall be copper and provided with studs matching the material of the bushing.

Bushings shall be horizontally configured at 24 inches above the pad and accept molded, separable deadfront connectors. Bushings shall be mounted with minimum spacing of 8.0-inches between centerlines, except between the C-phase bushings which may be a minimum of 7.0-inches. A standoff bracket or parking stand shall be supplied for each bushing and shall be mounted horizontally adjacent to each bushing on a 4.0-inch centerline from the bushing centerline. The standard phasing of the bushings from left to right shall follow the sequence ABC-CBA. Each bushing shall have identification affixed to the front plate identifying its source or tap designation, as shown on the one-line operating diagram, and its phase identification.

6. Source Switches

Source Switches shall utilize vacuum interruption only, such that the dielectric media is never contaminated by switching arc products. Switches shall be three-phase gang-operated vacuum switches that meet or exceed the performance requirements of latest revision of IEEE Std. C37.74 standard. The mechanism and the vacuum interrupters employed shall be capable of interrupting the rated continuous current 600 amperes. The switch shall have a single operating handle, designed for operation with a lineman's hotstick, which has a push to close / pull to open operation. Operation of the handle shall be requiring no more than 75 lbs. of force and 60 degrees of movement for complete operation. The mechanism shall close the switch independently of the operator's speed of moving the handle. The switch, as a safety feature, shall close into a fault and remain closed at any current up to its full rating. Switch operating handles shall be front plate mounted and shall be padlockable in both the open and closed positions.

7. Vacuum Fault Interrupters

The switchgear shall incorporate vacuum fault interrupters for tap overcurrent protection only, such that the major dielectric media is never contaminated by circuit interruption arc products. The device shall be capable of interrupting all fault currents up to its maximum rated current of 12,500 RMS amperes symmetrical. The interrupter shall be manually resettable, with no consumable parts (i.e. fuses). The maximum interrupting time from issuance of a trip signal from the electronic control shall be 2 cycles.

To maximize safety to the operator, the interrupter shall incorporate a trip-free mechanism to prevent the possibility of holding the interrupter mechanism closed under a faulted circuit condition.

The vacuum fault interrupters shall act as a three-phase group operated fault interrupter. The trip mechanisms for each phase shall be mechanically linked and the electronic control shall be set so that an overcurrent condition on any one phase shall simultaneously trip all three phases. A single operating handle shall be provided for manual opening, reset and closing. The operating handle(s) shall be mounted on the front plate of the tank in close relation to the VFI being controlled and shall have three distinct operating positions corresponding to the vacuum fault interrupter positions of closed, open, or tripped. A pointer attached to the handle shall be provided for ready identification of the handle's position. The handle shall be designed for operation with a lineman's hotstick and have a push to close / pull to open / pull to reset operation requiring no more than 75 lbs. of force and 60 degrees of movement for complete operation. Except when equipped with the optional motor operator, when the vacuum fault interrupter is tripped by automatic action of the VFI control, the operating handle shall drop to an intermediate position between its closed and open positions, to provide indication that it is tripped. When optional motor operators are used or provisions for future motor operators are specified, semaphores are required to display the open-close status of the interrupter or switch contacts. The operating handle assembly shall include provisions to padlock the handle in the open position.

8. Visible Break Switch (three phase trip ways only)

A separate, interlocked, visible break switch shall be provided in each circuit specified. This shall be available on the source switches and the VFI load protecting interrupters. The visible break switch shall be 3 position (Open/Closed/Cable Ground). The visible break option will consist of an isolating switch, in series with the vacuum switch, which meets all of the continuous current and voltage ratings of the switchgear. The contacts of the visible break switch will be clearly visible through a 4" x 11" view window manufactured of a clear material with an impact strength rating of "Excellent". Both the vacuum switches or interrupters and their corresponding visible break switches shall be mechanically interlocked such that the visible break switch will never operate under load. All current interruption shall be by the vacuum interrupters.

9. Protective Relays

Source and Taps ways shall be protected with microprocessor-based Eaton's Cooper Power series Edison IdeaPLUS relays. iTAP-265 or equal.

The iTAP-265 dual overcurrent relay shall be used for protection of two taps with independent settings for each 3-phase tap. Each tap shall also include a ground overcurrent element. Integral motor control logic shall be provided that does not require a separate motor controller. iTAP-265 shall also be able to control the motors using the motor controller.

Following features shall be included in iTAP-265 Relay

- Incipient Cable Splice Fault (ICSF) Detector.
- Sequence of Event recorder with capacity to store the most recent 250 events in non-volatile memory.
- Oscillography for fault analysis. The oscillography shall be 20 cycles long with capacity for storing the most recent 10 events.
- Programmable Data Profiler to record any combination of the available metering data.
- Metering - instantaneous current, voltage, power factor, power, energy, demand, and harmonics (requires PTs, available liquid insulated only).

- Available communications protocols shall include DNP3 via serial and TCP/IP, and Modbus via serial.
- Graphical programming environment for custom logic and communication point maps.
- Virtual Test Set for testing relay settings without the need for an external test set.
- Integral breaker Interface panel, including illuminated Trip and Close pushbuttons, Close Inhibit switch.
- Twenty-five front panel LED target to indicate relay status.

Features common to all controls

The control and its enclosure shall be mounted on the inside of the cabinet door of the source compartment. The control enclosures shall be stainless steel (as specified for the unit) and vented in design to prevent trapping of moisture within the control. The control enclosures shall have internal thermostatically controlled 120 Vac heaters to prevent condensation in the enclosure.

The control shall be equipped with a 13 Ah 24 Vdc lead acid battery for operation upon loss of AC power.

The battery shall have a minimum life expectancy of four years.

The control shall maintain full operation from the battery for the following period of time:

13 Ah - 25 hour maximum (20°C)

10. Finish Performance Requirements

The switchgear shall be constructed of mild steel with stainless steel details and painted green conforming to Munsell 7GY 3.29/1.5 unless otherwise specified. The coating system employed shall meet or exceed IEEE Std C57.12.28™-2005 standard coating system requirements for underground distribution equipment, including the following performance tests:

- 24-hour 5% salt spray corrosion test per ASTM B117 / D1654
- 1000-hour humidity test per ASTM D2247 / D1654
- 500-hour ultraviolet accelerated weathering test per ASTM G53 / D523

- Direct impact test with 160 in. lb. falling dart per ASTM D2794
- Tabor abrasion test 3,000 cycles per ASTM D4060
- Crosshatch adhesion per ASTM D3359

11. Features

Motor Operator Mounting Provisions

When specified, the source vacuum switches and VFI taps shall be provided with mounting provisions for future addition of motor operators. The provisions shall include auxiliary switches with one "a" and one "b" contact, mounting studs and semaphores for motor operator mounting brackets, switch operating handles with provision for attachment to motor operators, studs and channels for routing cable connections to the future motor operator control, stud mounting provisions on the inside of one of the cabinet doors (standard location) for the future motor control, and a minimum of a 30-inch deep cabinet that shall have side-hinged doors.

Motor Operators with iTAP-265 and DC Motor Operator Controls

When specified. DC motor operators, with control shall be supplied for the vacuum switches and VFI taps. The unit shall include all standard motor operator mounting provisions specified above. The motor operator shall utilize 24Vdc motor actuators to open and close the respective switch or VFI. The time required to open or close a switch or VFI shall be approximately 8 seconds. The control shall be equipped with a 2.5 amp-hour sealed lead acid gel-cell battery to supply energy to activate the motor operators and control functions. Battery charge shall be maintained by a temperature/voltage regulated charger within the control that shall be capable of fully re-charging a low battery within 24 hours. Semaphores are required to display the open-close status of the interrupter contacts

The control shall utilize a user supplied 120 Vac two-wire grounded supply. If an internal potential transformer for power supply to the control has been specified (see below), the unit shall be provided with all necessary wiring factory installed.

The control shall include the following features:

The control shall be capable of operating up to six motor actuators, one at a time. A local selector switch shall be provided on the control panel to select the motor actuator that is to be operated.

Open, Close, and Stop pushbuttons shall be provided for operation of the selected motor actuator.

Open and Closed indicating lights shall be provided to indicate status of the selected switch or VFI. These status lights shall use auxiliary switch inputs from the source vacuum switch or VFI to determine open or closed status.

Opening and closing indicating lights shall be provided to verify that the selected motor actuator is in process of opening or closing a switch. A lamp test pushbutton shall be provided to confirm that indicating lights are functional.

A Power On/Off toggle switch shall be provided that shall disconnect the dc voltage supply from the control and any selected motor actuators and shall function as a dc circuit breaker to interrupt the dc supply in the event of a short circuit or overload.

An indicator shall be provided to verify that 120 Vac power is present and that the battery charging circuit is providing a charging voltage to the battery. A battery test pushbutton shall be supplied with test points to apply a voltmeter for testing the condition of the battery.

A Local/Remote toggle switch shall be provided. In the Local position, the switch shall allow operation of the motor actuators by the pushbuttons on the control panel only and shall not allow remote or SCADA operation. In the Remote position, the switch shall only respond to the remote or SCADA operation of the motor actuators.

The control shall include a terminal strip for connection to SCADA or remote-control equipment. The terminal strip shall have connections for selecting a motor actuator with a maintained dry contact input, reading the Open/Closed status of the associated switch or VFI, initiating a Open or Close operation via a momentary dry contact, and reading the Opening/Closing status of the motor actuator as it performs the required operation

An electrical interlock shall exist to coordinate the operation of any motor controlled switch with any separately specified visible break switch.

Optional provisions, such as an internal potential transformer (to 25 kV) for power supply to the control, shall be supplied only when specified as a requirement for a liquid-insulated unit.

12. Internal PT Power

Internal 1.5 kVA rated single-phase potential transformer shall be provided that shall be connected as indicated on the one line drawings. Protection against potential transformer failure by a liquid insulated primary current-limiting fuse shall be provided. The transformer primary shall be rated for line-to-line connection at 34.5kV and provide a 120 Vac secondary voltage output. Primary connection shall be phase-to-phase and secondary grounded wye. The potential transformer shall be wired to the MIL C-5015 style connector that is provided for the auxiliary switch connections. The potential transformer shall provide power for motor operators and the Idea relay controls. For units with two possible power sources, the control circuits shall contain a power transfer relay so that the controls are continuously energized and inactive PT's and associated bus will not be reverse energized by the control circuits.

13. Open/Close Semaphores

When specified, an Open (green)/Closed (red) semaphore shall be provided for each way, which shall indicate the open or close status of the vacuum switches and the vacuum fault interrupters. The semaphore shall be mounted internally and shall be directly linked to the movable contact rod of the vacuum switch and vacuum fault interrupter. The semaphore shall be visible through a window.

14. Auxiliary Switches

When specified, the source vacuum switches, and VFIs, shall be provided with two stage "a" and "b" auxiliary switches for the purpose of remote indication of status. The auxiliary switches shall be linked to the movable contact rod of the vacuum switch/VFI and shall be internally pre-wired to a MIL C-5015 style circular power connector receptacle, mounted on the front plate. The receptacle shall

be provided with a mating plug for user's cable termination. These auxiliary switches shall be rated for 15-amps @ 120 Vac / 1-amp @ 125 Vdc.

15. Operations Counters

When specified, An operations counter shall be supplied, externally mounted and mechanically linked to the operating handle of each way.

16. Certified Design Test Data

Certified design test data shall be furnished upon request. The test data shall bear the seal of a Registered Professional Engineer and shall be available for the following:

Switch ratings per IEEE Std C37.74™-2003 standard
Interrupter ratings per IEEE Std C37.60™-2003 standard
Coatings per [select: IEEE Std C57.12.28™-2005 or IEEE Std C57.12.29™-2005 standard]

17. Production Testing

At a minimum, the unit shall be subjected to the following production tests:

- Continuity test to assure correct internal connections.
- Hi-pot test to determine dielectric strength of the unit.
- Leak test to assure tank is completely sealed.
- Electrical TCC trip test.

18. Submittals

The manufacturer shall furnish a detailed list of ratings and accessories and set of drawings defined as follows drawings for approval:

- Detailed front elevation.
- Single Line
- Base Plan
- Schematics

The manufacturer shall furnish instruction manuals covering the installation of the switchgear and the operation of its various components.

19. Quality Assurance

The manufacturer shall be a company specializing in medium voltage underground distribution switchgear with at least fifteen years of documented experience.

Equipment shall be built in accordance with the industry standards for medium voltage equipment.

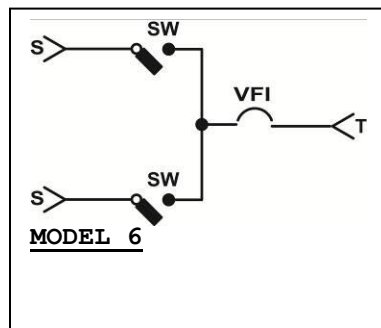
The manufacturer shall be registered and certified as ISO 9001 compliant by a recognized international and independent body.

20. Warranty

The underground distribution switchgear shall be provided with a one-year warranty in-service/18 months maximum from date of shipment.

21. Approved Manufacturers

Eaton's Cooper Power: KPDE-VF6-37 or equal



ITEM #4 - Two (2) - 35kV PMDF Dead-front Padmounted Primary Metering Switchgear

1. Product

The pad-mounded metering switchgear shall be in accordance with all the applicable plans, drawings, and one-line diagrams and shall conform to these specifications.

2. Assembly

The outdoor pad-mounted primary metering switchgear shall consist of a single self-supporting enclosure, with primary bus, cable-termination points, current and voltage sensing

transformers, meter socket, test switch and wiring. The unit will be factory assembled and checked to the level of the components supplies.

3. Configurations

Outdoor pad-mounted primary metering switchgear shall be radial feed. Radial designs shall have three (3) bushing wells for 600 amps service on the source (line) side and three (3) bushing wells for 600 amps on the load side, for a total of six (6) bushing wells.

4. Ratings

The ratings for the integrated pad-mounted primary metering enclose assemblies shall be as follows:

System Voltage Class	
kV, Nominal	35
kV, Maximum Design	38
kV, BIL	150
Main Bus Continuous, Amps	600

5. Certification of Ratings

The manufacturer shall be completely and solely responsible for the performance of the basic switchgear components as well as the complete integrated assembly as rated.

The manufacturer shall furnish, upon request, certification of ratings of the basic switchgear components and/or the integrated pad-mounted switchgear assembly consisting of the switchgear enclosure, primary bus, bushings and bushing wells.

6. Compliance with Standards and Codes

The pad-mounted primary metering switchgear shall conform to or exceed the applicable requirements of the following standards and codes:

All portions of ANSI C57.12.28 covering enclosure integrity for pad-mounded equipment.

Applicable portions of IEEE C37.74 covering the design and testing of distribution switchgear, components, and ways.

Applicable portions of IEEE-386 (formerly ANSI C119.2) which covers bushings and bushing wells.

7. Enclosure Design

To ensure a completely coordinated design, the pad-mounted switchgear shall be constructed in accordance with the minimum construction specifications required to provide adequate electrical clearances and adequate space for operation of the unit and any required handling of components.

In establishing the requirements for the enclosure design, consideration shall be given to all relevant human factors, such as controlled access and tamper resistance, as well as environmental factors, such as ingress of air-borne contamination and ventilation necessary for control of moisture and condensation.

8. Construction - Assembly

Insulators, Bushings, and Bushing Wells

The pad-mounted metering switchgear insulators, bushings, and bushing wells shall have the following material characteristics and restrictions:

Operating experience of at least twenty (20) years under similar conditions.

Ablative action to ensure non-tracking properties.

Adequate leakage distance established by test per IEC Standard 60507.

Adequate strength for short-circuit stress established by test.

Conformance to ANSI/IEEE standard 386.

Homogeneity of the cycloaliphatic epoxy resin throughout each insulator, bushing, and bushing well to provide maximum resistance to power arcs. Ablation due to high temperature from power arcs shall continuously expose more material of the same composition and properties so that no change in mechanical or electrical characteristics takes place because of arc-induced ablation. Furthermore, any surface damage to installation or maintenance of the pad-mounted gear shall expose material of the same composition and properties so that insulating components with minor surface damage or imperfections need not be replaced.

Each insulator, bushing, and bushing wells shall be x-rayed to assure it is free of voids. An alternative testing method may be used only by approval of the engineer.

Conductor rods of bushings and bushing wells shall be of all copper construction, with the associated threaded studs to be copper with a sliver flash.

High-Voltage Bus

Bus and interconnections shall consist of bare aluminum bar of 56% IACS conductivity with an oxide-inhibiting agent at all bus joints.

Bus and interconnections shall withstand the stresses associated with short circuits up to the maximum rating of the pad-mounted gear.

Bolted aluminum to aluminum connections shall be made with a suitable number of non-corrosive bolts, with two Belleville spring washers per bolt, one under the bolt head and one under the nut, or with a wide-flange head bolt and one Belleville spring washer under the nut, per bolt. As an alternate, bolted aluminum-to aluminum connections shall be made with a suitable equivalent surface area, i.e.- 1-bolt and spring washer. Bolts shall be tightened to an appropriate torque to assure good electrical connection.

Before installation of the bus, all electrical contact surfaces shall first be prepared by abrading to remove any aluminum-oxide film. Immediately after this operation, the electrical contact surfaces shall be coated with uniform coating of an oxide inhibitor and sealant.

Ground-Connection Pads

A ground connection pad shall be provided in each termination compartment of the pad-mounted switchgear.

The ground connection pad shall be constructed of ¼" thick, stainless steel and have a NEMA 2- hole pattern for ground connections. The pad shall be welded to the enclosure and shall have a short-circuit rating equal to the integrated assembly.

A full-width copper rod for connection of grounding devices and ground leads shall be provided in each cable termination compartment.

9. Construction Enclosure and Finish

Enclosure

The primary metering enclosure shall be of unitized construction (not structural frame and bolted sheet) to maximize strength, minimize weight, and inhibit internal corrosion.

The basic material for the enclosure, roof, and doors shall be 11-gauge, hot rolled, pickled and oiled steel.

All structural joints and butt joints shall be welded, and external seams shall be ground flush and smooth. A welding process shall be employed that eliminates alkaline residues and minimizes distortion and spatter.

To guard against unauthorized or inadvertent entry, enclosure construction shall not utilize any externally accessible hardware.

The base shall consist of continuous 90 degree flanges, turned inward and welded at the corners, for bolting to the concrete pad.

The door openings shall have 90 degree flanges, turned inward and welded at the corners, for bolting to the concrete pad.

In consideration of tamper resistance, the enclosure shall conform to, or exceed, the requirements of ANSI/IEEE C57.12.28.

A heavy coat of insulating "no-drop" compound shall be applied to the inside surface of the roof to reduce condensation of moisture thereon.

The roof shall be removable with bolts accessible in the termination and the metering transformer compartments.

Lifting tabs shall be removable. Sockets for the lifting-tab bolts shall be blind-tapped. A protective material shall be placed between the lifting tabs and the enclosure to prevent the tabs from scratching the enclosure finish. This material shall be non-hygroscopic to prevent moisture from being absorbed and allowed to remain against the enclosure.

To prevent moisture ingress, the roof shall be one-piece construction and shall not include any gasketed joints.

Any welded butt joints exposed to the exterior shall be ground smooth.

A steel equipment wall is provided for mounting of the bushing wells and/or bushings, as well as to separate the dead-front cable termination compartment from the medium voltage transformer compartment.

Barrier Assembly

Insulating barriers shall be provided between metering transformers when required to achieve necessary insulation levels between phases. The barriers shall be constructed of fiberglass reinforced polyester (NEMA GPO-3).

Doors

Doors shall be constructed of 11-gauge hot-rolled, pickled and oiled sheet steel.

Door edge flanges shall overlap with door opening flanges and shall be formed to create a mechanical maze that shall guard against water entry and discourage tampering or insertion of foreign objects.

Doors shall have minimum of three stainless steel hinges and hinge pins. The hinge pins shall be secured in place to guard against tampering.

One active and one passive door shall be provided in the case where there are two adjacent doors. In consideration of controlled access and tamper resistance, each active door shall be equipped with a three-point latching mechanism and padlock hasp.

Each active door shall be provided with a hinged stainless-steel cover over the padlock hasp. The cover shall be padlockable and shall incorporate a cover to protect the padlock shackle from tampering.

Each handle shall be provided with a recessed penta-head bolt for additional security.

Each passive door shall be independently secured (bolted or latched) to the enclosure.

Each door shall be provided with a stainless-steel door holder located above the door opening. These holders shall be hidden from view when the door is closed. It shall not be possible for the holders to swing inside the enclosure.

Finish

Full coverage at joints and blind areas shall be achieved by processing enclosures independently of components, such as doors and roofs, before assembly as unitized structures.

All exterior welded seams shall be sanded or ground smooth for neat appearance.

All surfaces shall undergo a chemical cleaning, phosphatizing or zirconization and sealing process before any protective coatings are applied in order to remove oils and dirt, form a chemically and anodically neutral conversion coating, improve the finish-to-metal bond, and retard under-film propagation of corrosion.

The finishing system shall be applied without sags or runs.

After the enclosure is completely assembled and the components (bus, bushings, etc.) are installed, the finish shall be inspected for scuffs and scratches.

Blemishes shall be carefully touched up by hand to restore the protective integrity of the finish.

Unless otherwise specified, the color shall be Munsell No. 7GY 3.29/1.5, bell green.

To ensure that the finishing system is capable of resisting corrosion, the manufacturer shall provide, on request,

certification that the representative test panels, protected by the manufacturer's finish system, have passed the coating system performance requirements in ANSI/IEEE C57.12.28 as verified by an independent third-party certifier, such as UL.

10. Construction - Internal Components

Cable Termination Compartments

Cable termination compartments shall be provided with 600-ampere rated apparatus bushings and 600-ampere busbar wells.

600-ampere rated bushings shall include removable silver-plated copper threaded studs to accommodate a choice of elbow-termination systems.

600-ampere rated bushing wells shall be designed to accept 200-ampere bushing inserts and shall have removable, silver-plated copper studs.

Bushings and bushing wells shall have interfaces in accordance with ANSI/IEEE Standard 386 to accept all standard separable insulated connectors and inserts.

A parking stand of stainless steel shall be provided adjacent to each bushing and bushing well to accommodate horizontal feed-through assemblies and stand-off bushings.

A location to accommodate drain wires from elbow connectors and accessories shall be provided adjacent each bushing and bushing well.

Metering Transformer Compartment

An insulated, hinged, GPO-3 barrier system, secured with pentahed bolts, inside the exterior steel doors, shall be provided to restrict immediate direct exposure to interior of the instrument-transformer compartment.

The following metering transformers shall be provided and install with the switchgear:

Two (2) GE JKW7, 757X050014 600:5 ratio 35kV CT's

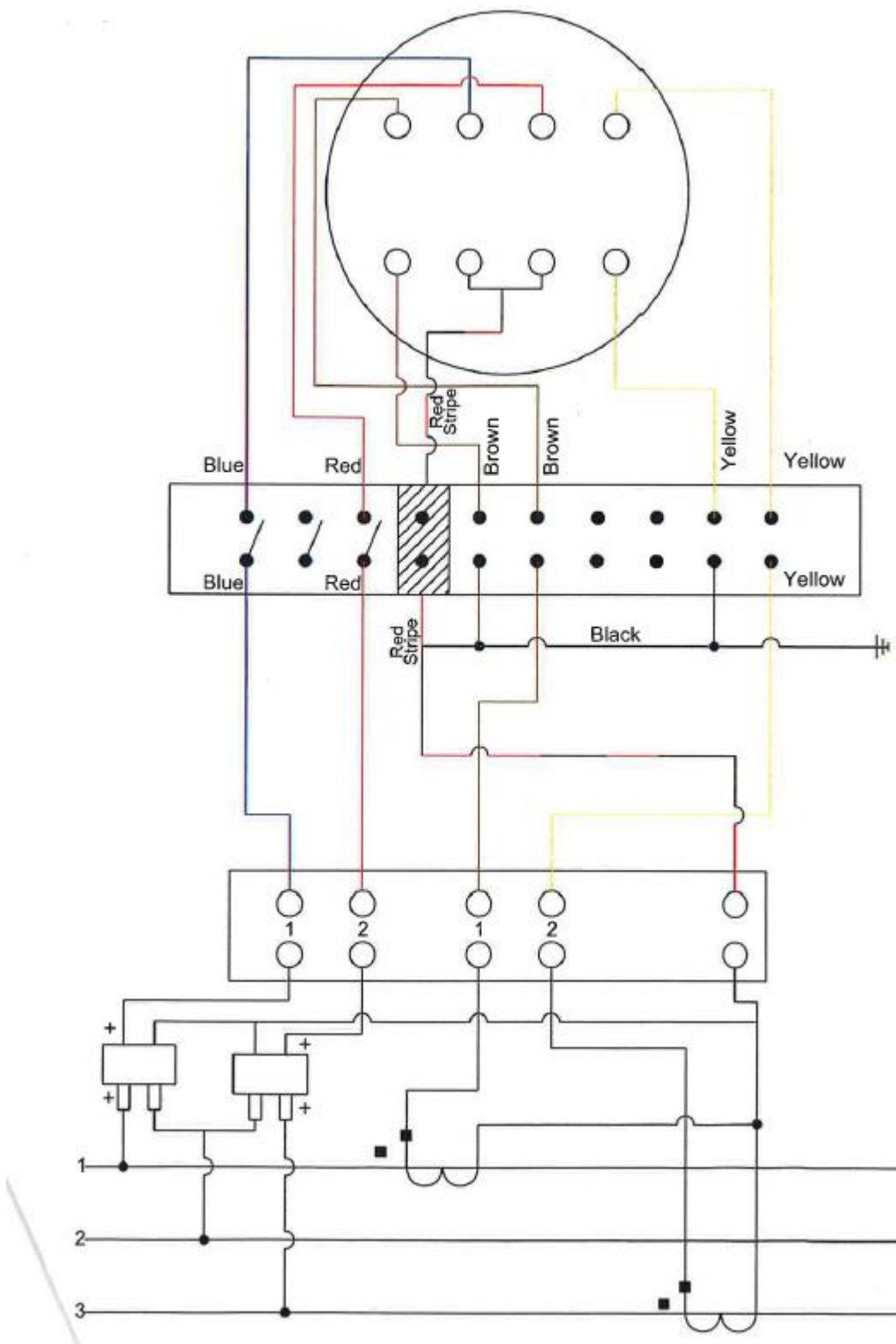
Two (2) GE JVV7, 767X031003 300:1 ratio 35kV PT's

Other components

Meter Socket - Meter Socket shall be Durham 20 ampere meter box 3PH 8 terminal. Catalog number: S/SW 20A 8T HCP or STL8-1C or equivalent.

Test Switch - Meter Socket shall be supplied with test switches.

Wiring - The meter box shall be pre-wired per below metering circuit with proper wiring color.



11. Labeling

Warning Signs

All active external doors shall be provided with approved "Warning- High Voltage - Keep Out" signs.

Additional Hazard

Alerting Signs and Labels for the Metering Transformer Compartment shall include:

A "Danger - High Voltage - Keep Out - Qualified Personal Only" sign on the inside of each door.

A "Danger" sign on both sides of each barrier in the metering transformer compartment.

Nameplates, Ratings Labels, & Connection Diagrams

The outside of both the front and back shall be provided with nameplates indicating the manufacturer's name, serial number, catalog number, model number, and date of manufacture.

The inside of each door shall be provided with a ratings label indicating the following: voltage ratings, main bus continuous rating, short circuit ratings (amperes RMS symmetrical at rated nominal voltage), and approximate weight.

A one-line connection diagram showing the bus, terminations, and locations of the PTs and CTs will be provided on the inside of the front and rear doors.

The exterior shall include labeling indicating the Elbow compartment and the Metering compartment, centered above the door(s).

Individual interior labeling shall be provided for the following:

- Phase identification (A, B, C)
- "Line" bushing identification
- "Load" bushing well identification

CITY OF NEWARK
Delaware

CONTRACT NO. 17-13

PURCHASE OF MATERIALS FOR THE CHEMOURS PROJECT

PROPOSAL

TO: The Mayor and City Council
 Newark, Delaware

FROM: _____

The undersigned as a lawfully authorized agent for the below named Bidder has carefully examined the General Provisions, Special Provisions, Technical Specifications, and Proposal to be known as Contract No. 17-13 and binds himself upon award to him by the Mayor and City Council of Newark, Delaware to execute in accordance with such award, a contract of which contract this Proposal and said General Provisions and any Addenda shall be a part, and to furnish the equipment as specified F.O.B. Newark, Delaware in a manner that is in complete accordance with said General Provisions, Special Provisions, and Technical Specifications, at the following named prices for the items:

BID PROPOSAL OF CONTRACT NO. 17-13			COMPANY _____		
ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	DEL'Y ARO	MFG'R/ CATALOG #
1	2	34.5KV Vacuum Circuit Breaker			
2	3	3 Pole Gang Operated Switch			
3	2	35kV Underground Distribution Switchgear			
4	2	35kV PMDF Dead-front Padmounted Primary Metering Switchgear			

COMPANY _____

Exceptions: _____

DATE: _____ Bidder/Contractor: _____

BY: _____
Its legally authorized representative

TITLE: _____

STREET ADDRESS: _____

CITY, STATE, ZIP: _____

CITY OF NEWARK
Delaware

CONTRACT NO. 17-13

PURCHASE OF MATERIAL FOR THE CHEMOURS PROJECT

BOND TO ACCOMPANY PROPOSAL

(not necessary if certified or cashier's check is used)

KNOW ALL MEN BY THESE PRESENTS THAT _____ of
_____ of the County of _____ and
State of _____, principal, and
_____ of _____ as
surety, legally authorized to do business in the State of
Delaware, are held and firmly bound unto the City of Newark in the
sum of _____ Dollars, to be paid to
said City of Newark for use and benefit of the Mayor and Council
of Newark, for which payment well and truly to be made, we do bind
ourselves, our and each of our heirs, executors, administrators
and successors, jointly and severally, for and in the whole,
firmly by these presents. Sealed with our seal dated the
_____ day of _____ in the year of our Lord, two
thousand and eighteen (2018).

NOW THE CONDITIONS OF THIS OBLIGATIONS IS SUCH, that if the
above bounded principal who has submitted to said City of Newark,
a certain proposal to enter into a certain Contract No. 17-13,
Purchase of Material for The Chemours Project, and if said shall
well and truly enter into and executes said contract

and furnish therewith such Surety Bond or Bonds as may be required by the terms of said contract and approved by said City of Newark, said Contract, and said Bond to be entered into within ten (10) days after the date of official notice of award thereof in accordance with the terms of said proposal, then this obligation to be void, otherwise shall remain in full force and virtue.

SIGNED AND SEALED IN THE
PRESENCE OF WITNESS:

SIGNED _____ (SEAL)

BY _____ (SEAL)

SIGNED _____ (SEAL)

BY _____ (SEAL)